

collection, Davis; however, a small series is in the collection of the University of California, Davis. The genitalic illustrations were made by Miss Judith Jay, departmental artist, Entomology Department, University of California, Davis. Appreciation is also due Mr. Gary Trenam for his help in this project.

#### LITERATURE CITED

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### Identity of the Moth, *Euxoa wilsoni*

(Lepidoptera : Noctuidae)

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Since the variability of *Euxoa wilsoni* (Grote) has led to much confusion and the original description was based on an aberrant form, the status of this species is reexamined here.

#### EUXOA WILSONI (Grote)

*Agrotis wilsoni* Grote, 1873. *Bull. Buffalo Soc.*, 1: 135.

*Agrotis specialis* Grote, 1874. *Bull. Buffalo Soc.*, 2: 62.

*Agrotis aequalis* Harvey, 1876. *Canadian Entomol.*, 8: 36.

*Euxoa wilsoni* Grote, 1903. *Cat. Noctuidae Brit. Mus.*, 4: 204.

By analyzing Grote's original description and a figure of the type, it is possible to identify a Californian coastal species of *Euxoa* as *wilsoni*. The original description was published in 1873. A year later, Grote re-described "*Agrotis*" *wilsoni* once again as the original combination, and this paragraph preceded his description:

I have now received a series of this fine species which is subject to considerable variation. My original description and figure illustrate the form in which the costal region and subterminal space are not differentiated by a paler color. The more usual form resembles *sexatilis* or *subgothica*, on account of the paler coloration of the costal region of primaries.

Smith (1890) under his description of "*Carneades*" *wilsoni* stated,

A pretty and well defined species with no peculiarities, not already enumerated; it varies from luteous to bright red brown, the latter being typical of *specialis*. Mr. Edward's collection shows both forms. The antennal difference noted by Mr. Grote exists in terms only. *Wilsoni* equally has "tufts of bristles on the joints" and at the same time both forms have them "brush-like." The U.S. Museum collection contains a very pretty series of this species showing the very wide range of variation in ground color. Scarcely two specimens are entirely alike, and yet the characteristic appearance of the species is so marked that no mistake is possible in its recognition.

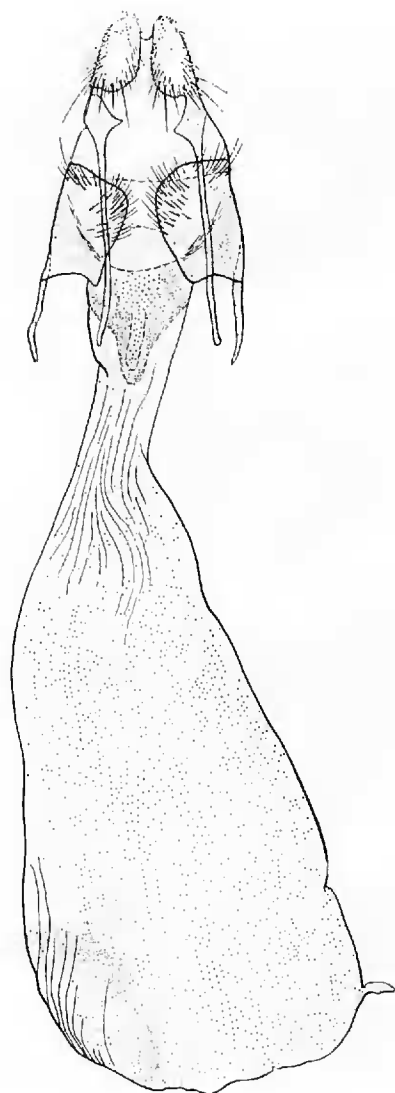


FIG. 1

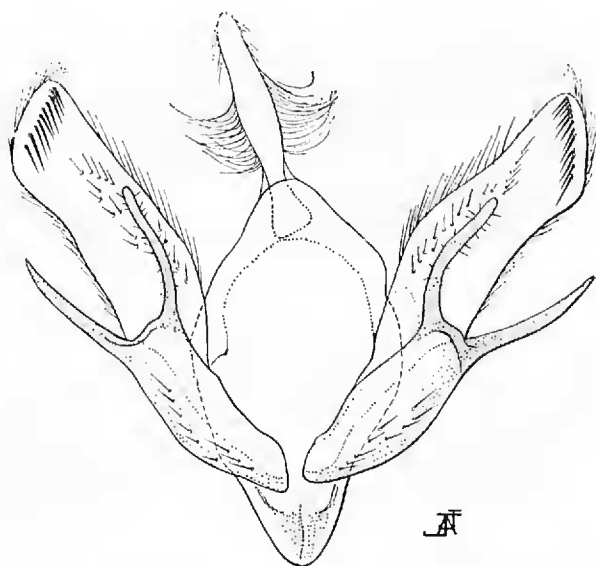


FIG. 2

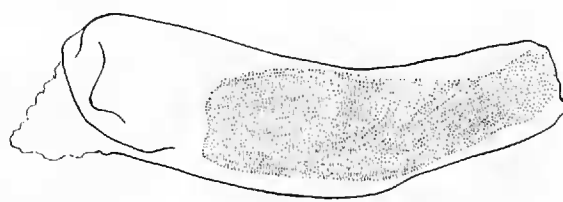
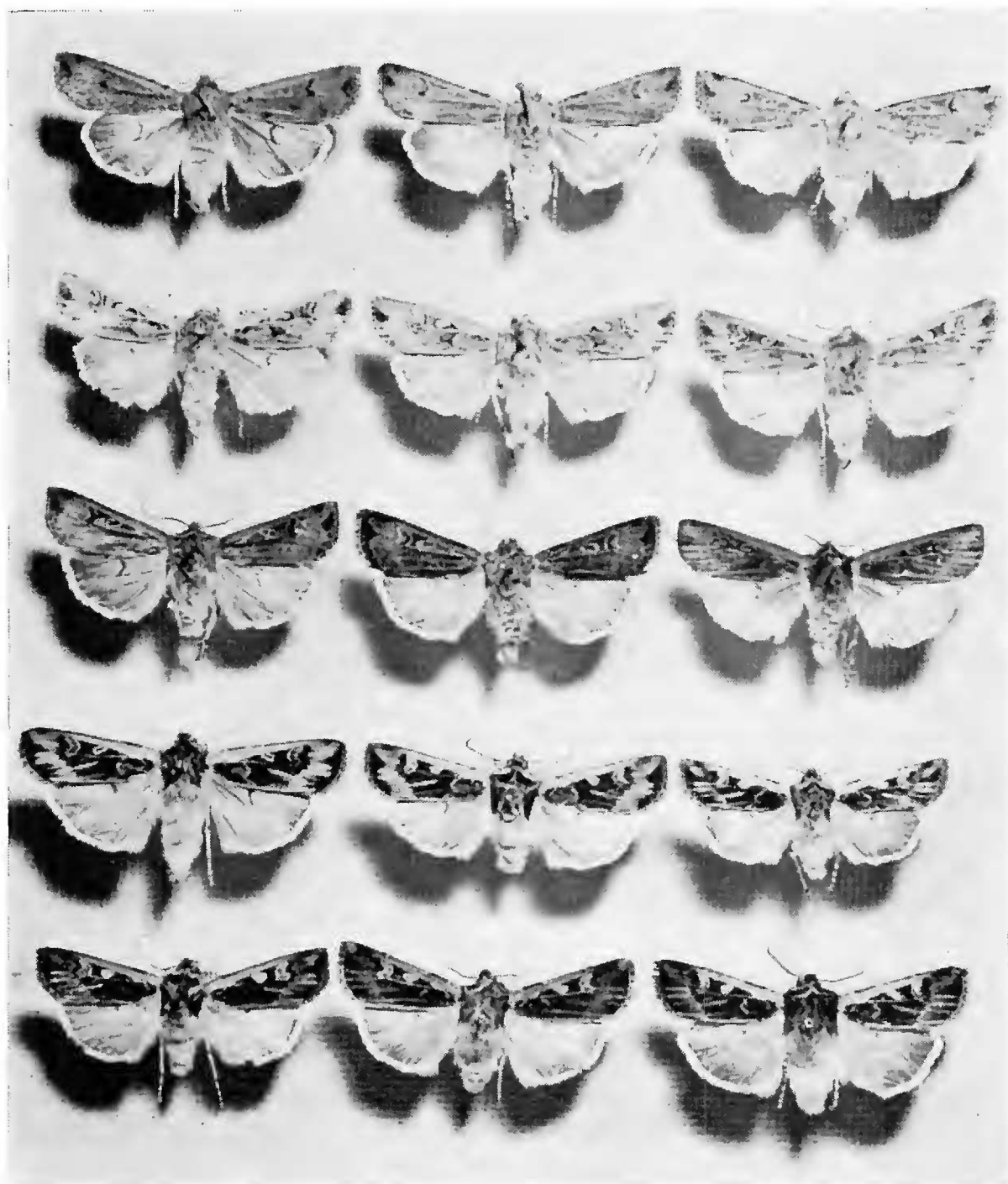


FIG. 3

## EXPLANATION OF FIGURES

Figs. 1-3. *Euxoa wilsoni* (Grote). 1, Female genitalia, Dillon Beach, Marin County, California, 10 July 1962 (M. G. Tunzi). 2, Male genitalia minus the aedeagus, Dillon Beach, Marin County, California, 12 July 1962 (M. G. Tunzi). 3, Aedeagus of genitalia shown in Fig. 2; same data as in Fig. 2.

After this statement, Smith treated "*Carneades*" *aequalis* as a separate species on the next page; and after his description further stated, "Apparently a good species allied to *lacunosa*. Entirely unknown to me in nature. I cannot identify it with any of the numerous Californian species known to me." Additional study by later workers proved "*Carneades*" *aequalis* to be conspecific with *Euxoa wilsoni*. The type of *aequalis* as well as that of another species, "*Agrotis*" *specialis* were originally from the same locality: "San Francisco, California" (*teste* Hampson, 1903). "*Agrotis*" *specialis* has been previously synonymized under *Euxoa wilsoni* where it obviously belongs. Hampson also stated in his "habitat" for *wilsoni*: "U.S.A., Colorado, Glenwood Springs, California, 2♂, 3♀, type ♂ speci-



## EXPLANATION OF FIGURE

Fig. 4. Variation in maculation of *Euxoa wilsoni* (Grote). All 15 specimens from Dillon Beach, Marin County, California, 12 July 1962 (M. G. Tunzi).

*alis* and ♀ type, and type *aequalis*, S. Francisco, 1 ♂." Generally, when Hampson placed the word "type" after a locality under his "habitat," it indicated this was the type locality. In this case the indication is that California is the type locality, probably San Francisco.

McDunnough (1938) once again raised *specialis*, and *aequalis*, to the subspecific level, but this was probably based on an inadequate number of specimens for study.

With a series of *wilsoni* before me which numbers over 600 specimens

of both sexes, one can readily see all the described forms and most of the variation the species exhibits. This large series was collected at Dillon Beach, Marin County, California, June and July 1962 (M. G. Tunzi) and is in the Bauer-Buckett collection, Davis. Other specimens studied are from McClure Beach, Marin County, California, and San Francisco, California, and are also in the Bauer-Buckett collection. Additional specimens from both McClure Beach, Marin County, and Dillon Beach, Marin County, are in the collection of the University of California, Davis. A series of 79 specimens which bear the locality label "San Francisco" and the Koebele collection label was submitted for this study by Dr. C. Don McNeill, California Academy of Sciences, San Francisco.

I wish to extend my appreciation to Dr. R. M. Bohart for his many helpful suggestions and to Miss Judith Jay, departmental artist, Entomology Department, University of California, Davis, for the illustrations.

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